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A4F

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(54) Suction cleaning/blower

(57) A suction cleaning/blower device comprises a casing 20 incorporating a suction fan/motor assembly, a filter unit 10, and an adapter 40 insertable into the exhaust port (not shown) of the casing, the adapter being connectable to an inflatable article e.g. dinghy.

FIG.1

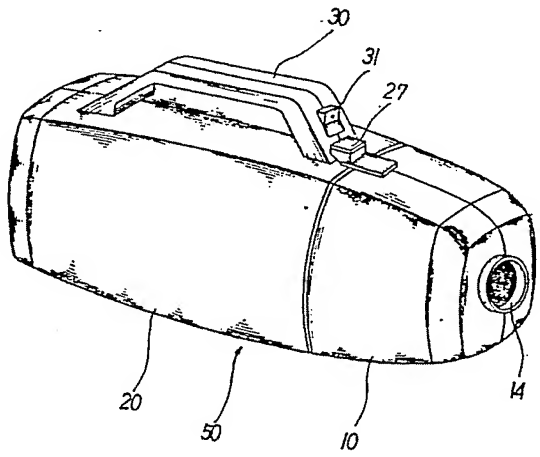
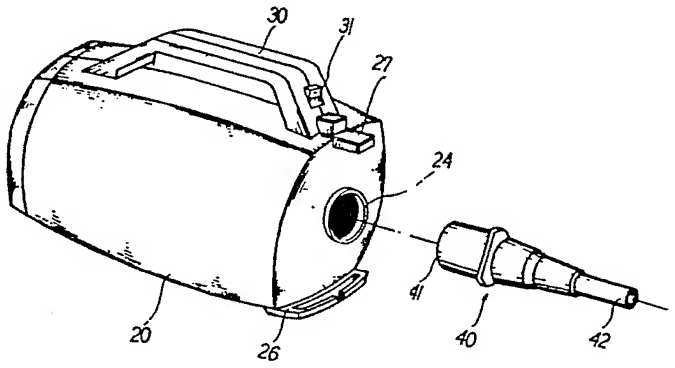


FIG.2



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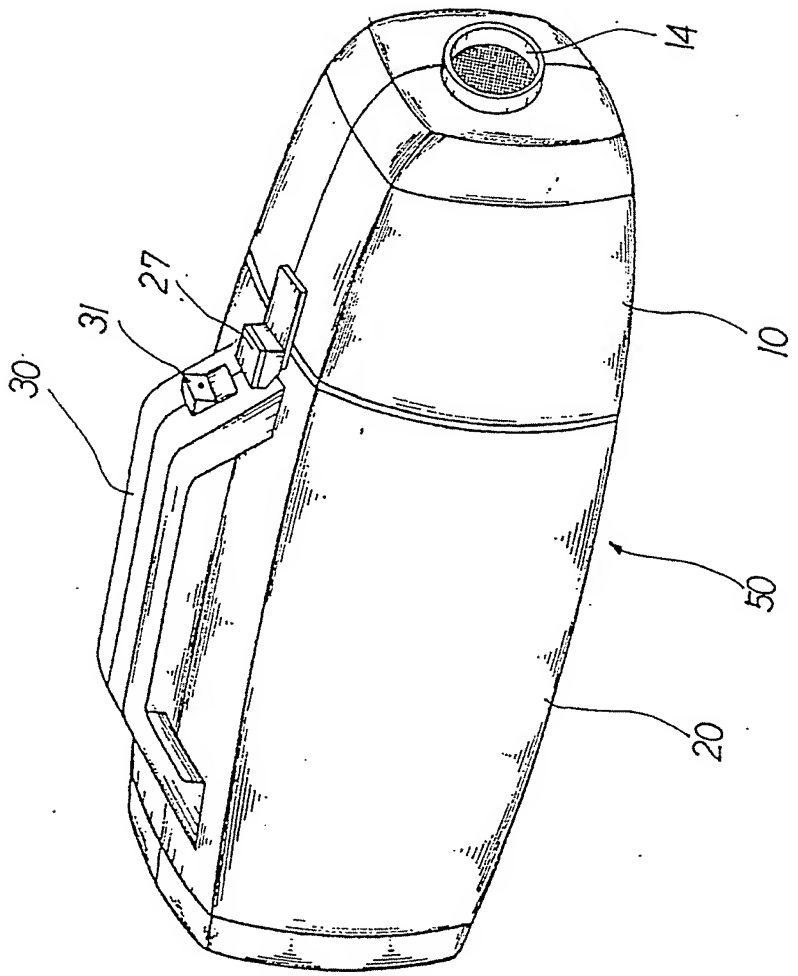

FIG.1

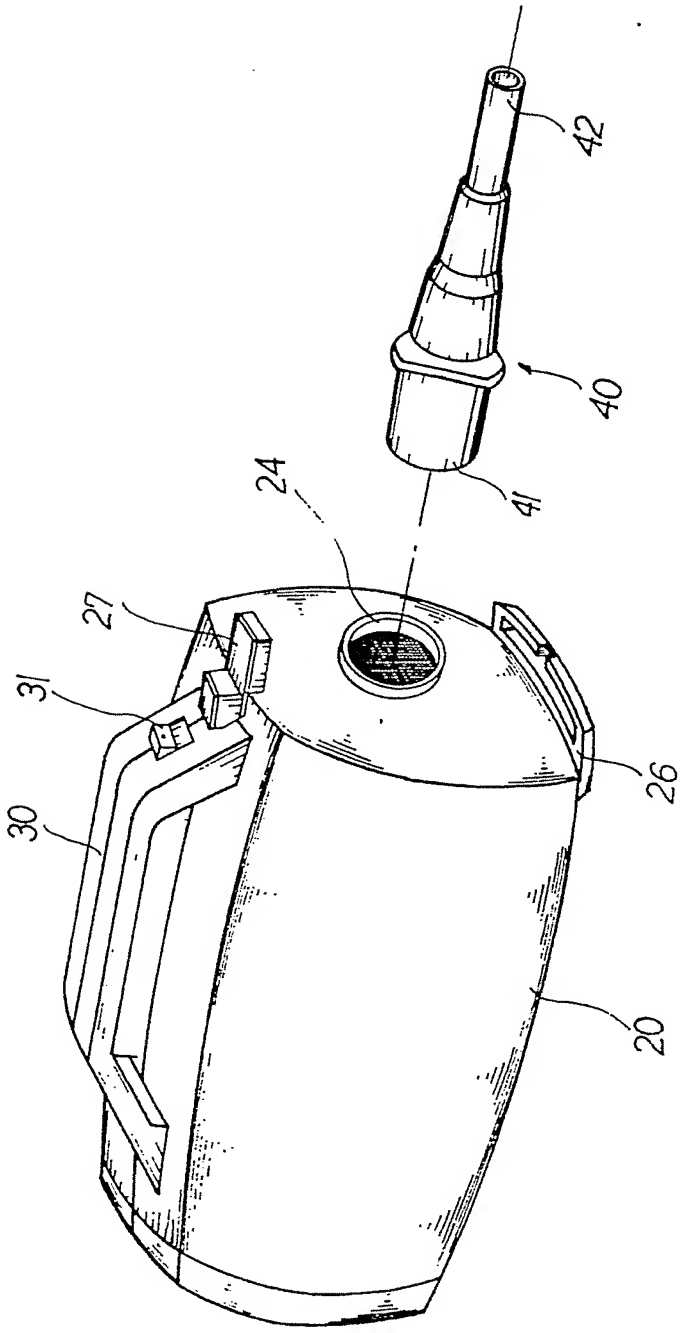

FIG.2

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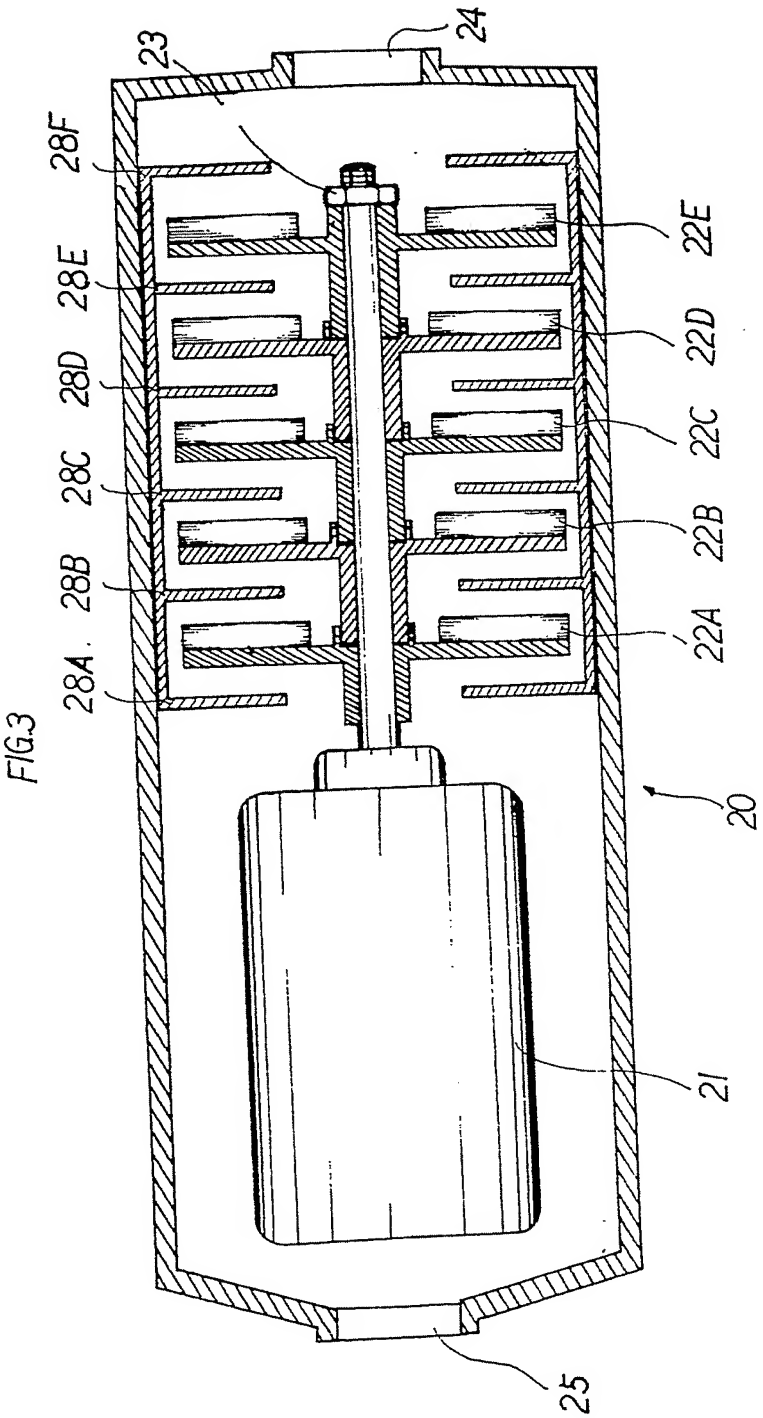

FIG.3

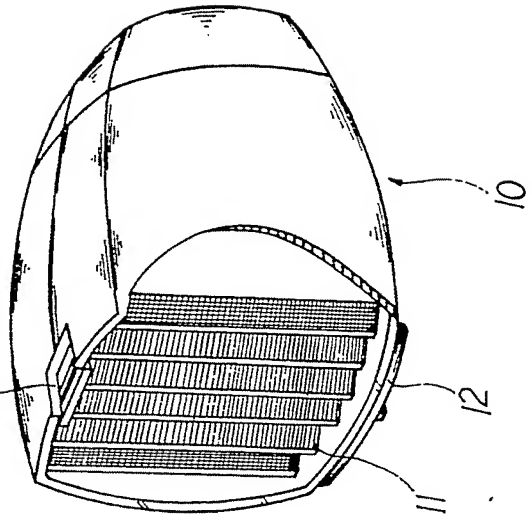

FIG4

SPECIFICATION

Multi-purpose air device

The present invention relates to a simply structured, easy to use multi-purpose air device duly designed to serve such purposes as gas pumping, gas inflation in addition to vacuum cleaning or dust collection.

It will be noted that conventional or regular vacuum cleaners are typically equipped with a one-piece blade, with the result that the wind power as produced by the electric motor is limited to accommodating merely the removal of dust from floors. The wind power therefrom will fail to serve to remove other heavier sorts of rubbish, not to mention metal refuse, and that is one major shortcoming of all kinds of known commercialized vacuum cleaners or dust removers because they can serve to remove but dusts and dusts alone, nothing more. And that is why conventional vacuum cleaners or like devices are not widely used out of household or office applications. In addition, in conventional use of a vacuum cleaner, the dust collection web as incorporated in the dust intake head is typically prepared in the form of a plate such that formidable noises will be incurred if scraps of paper are sucked against the dust collection web in the course of a cleaning operation, with the effect that the paper scraps will have to be removed in order to get rid of such noises. In addition, it is not so easy for the dust lingering about the dust collection web to fall exactly into the dust bag provided thereunder.

Accordingly, the present invention provides a multi-purpose air device comprising a motor, a blade member, a dust intake head having a wavelike dust collection web, and an adapter, a strong suction wind power being produced by means of a synchronised rotation of the blade member when driven by the motor whereby dust on a surface can be taken away, there also being available such other areas of service as performed by a regular gas pump.

Other features and advantages of the present invention will emerge from the following description of an embodiment given by way of illustration but not in any way limiting, with reference to the accompanying drawings in which:

Figure 1 is a three-dimensional perspective view of a multi-purpose air device according to the present invention,

Figure 2 is an illustration of the multi-purpose air device of Fig. 1 arranged for a pumping or inflating operation;

Figure 3 is a sectional view of the main body of the multi-purpose air device of Figs. 1 and 2, and

Figure 4 is a perspective profile of a part of the multi-purpose air device of Figs. 1, 2 and 3.

Referring to Fig. 3, it will be seen that the multi-purpose air device has a main body 20 in which there is provided an electric motor 21 with its shaft extended to mount blades 22A, 22B, 22C, 22D and 22E, the blades are fixed for rotation with the shaft by a hexagonal screwnut, and are altogether driven in synchronised rotation by the electric motor 21 such that an air convection will take place for suction into inlet port 24, going through guide pieces 28A, 28B, 28C, 28D, 28E, 28F for egression through exhaust port 25. A characteristic of the arrangement is that the air prevailing in-between two consecutive guide pieces, on being absorbed by the immediately following blade, is recycled over and over again, which results in an expedited increase of the inflowing air sucked in by way of the inlet port 24, thereby producing a strong wind power.

Referring to Fig. 2 it is seen that to effect a pumping or inflation service, one terminal 41 of an adapter 40 is inserted into the inlet port 24 at the front of the main body 20 or else inserted into the exhaust port 25 on the opposite end as illustrated in Fig. 3. This leaves the other end 42 of the adapter 40 available as an extension to gain easy access to a swimming pool or an inflatable article, such as a dinghy, at appropriate access points for inflation or pumping purposes.

Referring to Fig. 4 it is seen that a wavelike dust access web 11 is provided in the dust collection head 10. This facilitates absorption of dust via the suction port 14 provided at the front of the head, as illustrated in Fig. 1, and assists in dust precipitating into the dust bag provided thereunder whilst serving to minimise operation noises.

Referring to Fig. 4, Fig. 2, and Fig. 1 altogether it is seen that a ledge 12 is provided under the dust collection head 10, for coupling to a counterpart notched ledge 26 that is provided centrally under the main body 20. On the top of the dust collection head 10 there is provided a notched section 13 which is meant to engage into a counterpart projecting section 27 which is provided on the main body 20 for assembling into a finish multi-purpose air device 50 as shown in Fig. 1. On the longitudinal centreline on top of the main body 20 there is provided a handle 30 to facilitate manual holding with a control pushbutton 31 provided where the thumb is to be placed on holding the unit, the pushbutton serving to activate the electric motor 21 incorporated therein.

Advantageously, the above described embodiment provides newly structured, easy to use and easy to carry multi-purpose air device embodying such performances as dust removal, gas pumping and gas inflation in a single unit, through years of researching efforts undertaken by the inventor.

By virtue of the structure and performance

of the invention disclosed thus far, there is every reason to assert that this is a truly worthwhile piece of invention because it embodies altogether the functions of dust collection, gas inflation and gas pumping in a single unit executed like what is conventionally known as a vacuum cleaner or dust remover.

CLAIMS

1. A multi-purpose air device comprising a motor, a blade member, a dust intake head having a wavelike dust collection web, and an adapter, a strong suction wind power being produced by means of synchronised rotation of the blade member when driven by the motor whereby dust on a surface can be taken away, there also being available such other areas of service as performed by a regular gas pump.

2. A multi-purpose air device according to claim 1, wherein the blade member comprises a plurality of blades fixed for rotation with the shaft of the motor such that the motor is activated, the blades will produce a strong wind blowing effect sufficient to remove nails, rivets and other metal pieces.

3. A multi-purpose air device according to claim 1, wherein the provision of a wavelike dust collection web in the dust intake compartment facilitates capturing of dust for disposition in a dust bag provided underneath.

4. A multi-purpose air device according to claim 1, comprising an inlet port in front of the main body thereof and an exhaust port at the rear thereof to facilitate the introduction of the adapter which will assist in achieving a convection of air current within to discharge the function of pumping and inflation, exhausting by by virtue of the activation of the motor.

5. A multi-purpose air device according to claim 4, wherein the adapter is a hollow duct with an outer diameter of one end thereof which can be inserted into the inlet port or the exhaust port as provided on the main body, with a central section that is processed into a semi-circular board in order that it will not easily slip off but facilitate holding on engagement, and with the other end extended with an outer diameter duly adapted to facilitate engagement with access holes of a swimming pool, buoy or an inflatable article, such as a dinghy, with a view to discharge a pumping or inflation operation.

6. A multi-purpose air device according to claims 1 comprising a bank of blades arranged along the shaft of the motor and fixed for rotation therewith.

7. A multipurpose air device substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

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